IN THE ABSTRACT

Please cancel the original Abstract and substitute the new Abstract set forth on the enclosed page.

REMARKS

The Examiner's suggestion to amend the Abstract was adopted.

This invention is directed to a human recognizable graphic element provided among the patterns of bars and spaces of a symbol. By way of example, see the double-headed arrow in Figs. 1-2. U.S. Patent No. 5,262,625 to Tom does not disclose such a graphic element and, hence, the Examiner's rejections are not understood.

As explained, for example, on page 4 of the specification, it is desirable for a consumer to realize at a glance that scanning a bar code with a certain "graphical message" will cause a specific action desired by the consumer. For example, the action can be to launch a web browser program. The graphical message serves as a graphical user interface for the consumer.

Tom discloses a reader for reading conventional bar codes. The Examiner's attention is drawn to Figs. 1 and 8-10 of Tom. No graphic element is provided among the patterns of bars and spaces.

To help expedite prosecution, the independent claims have been amended herein to further emphasize the graphic element feature. Thus, not only is the graphic element provided among the bars and spaces, but it is also "visually distinguished in

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appearance" therefrom. The graphic element constitutes a graphical user interface that graphically conveys to a human operator a visual message that a known action will be initiated upon reading of a respective symbol. Tom discloses no such graphic element.

Allowance of all claims is respectfully requested.

Wherefore, a favorable action is earnestly solicited.

Respectfully submitted,

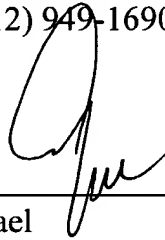KIRSCHSTEIN, OTTINGER, ISRAEL & SCHIFFMILLER, P.C.
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MARKED-UP VERSION OF AMENDED CLAIMS

1. (Amended) A bar code symbology, comprising: a set of symbols including characters having patterns of bars and spaces, each character spanning a distance of m module widths and being represented by n bars and p interleaved spaces, the largest single bar or space being limited to k modules in width, each symbol having a human recognizable graphic element provided among, and visually distinguished in appearance from, the patterns of bars and spaces, at least a portion of the graphic element being machine readable and recognizable by a decoder as a portion of a respective symbol, the graphic element constituting a graphical user interface that graphically conveys to a human operator a visual message that a known action will be initiated upon reading of the respective symbol.

12. (Amended) An information-bearing machine-readable carrier, comprising:

a substrate; and

a symbol having characters and patterns of bars and spaces on the substrate, each character spanning a distance of m module widths and being represented by n bars and p interleaved spaces, the largest single bar or space in a character being limited to k modules in width, the symbol having a predetermined start pattern and a human recognizable graphic element provided among, and visually distinguished in appearance from, the patterns of bars and spaces, at least a portion of the graphic element being machine readable and recognizable by a decoder as a portion of a respective symbol, the graphic

element constituting a graphical user interface that graphically conveys to a human operator a visual message that a known action will be initiated upon reading of the respective symbol.

13.   (Amended)   An apparatus, comprising:

an imager for obtaining image data of a target in an image field, the target including a symbol having characters and patterns of bars and spaces, each character spanning a distance of m module widths and being represented by n bars and p interleaved spaces, the largest single bar or space in a character being limited to k modules in width, the symbol having a predetermined start pattern, a predetermined stop pattern, and a human recognizable graphic element provided among the patterns of bars and spaces, at least a portion of the graphic element being machine readable; and

a decoder for recognizing the portion of the graphic element as a portion of the symbol, and for processing the image data to derive information contained in the symbol, the graphic element constituting a graphical user interface that graphically conveys to a human operator a visual message that a known action will be initiated upon reading of the respective symbol.

14.   (Amended)   An apparatus for generating a signal representative of information encoded in a machine-readable symbol, the apparatus comprising:

a)   a scanner for scanning a single row of encoded characters of the symbol with light for reflection therefrom, each character representing an item of data and being selected from a set of detectable mark/space patterns, each character spanning a

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distance of m module widths and being represented by n bars and p interleaved spaces, the largest single bar or space in each character being limited to k modules in width, the symbol having a human recognizable graphic element provided among, and visually distinguished in appearance from, the patterns of bars and spaces, at least a portion of the graphic element being machine readable;

b) a detector for detecting at least a portion of light reflected from the symbol, and for generating an electrical signal indicative of the detected light; and

c) a decoder for recognizing from the electrical signal the portion of the graphic element as a portion of the symbol, and for decoding the electrical signal to obtain a plurality of corresponding data values representative of the information contained in the symbol, the graphic element constituting a graphical user interface that graphically conveys to a human operator a visual message that a known action will be initiated upon reading of the respective symbol.

15. (Amended) A method of decoding a bar code symbology that stores computer-executable instructions on a computer-readable medium, comprising the steps of:

acquiring data from an electro-optical scan of a bar code symbol having said symbology by scanning a single row of encoded characters of the symbol with light for reflection therefrom, each character representing an item of data and being selected from a set of detectable mark/space patterns, each character spanning a distance of m module widths and being represented by n bars and p interleaved spaces, the largest single bar or space in

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each character being limited to k modules in width, the symbol having a human recognizable graphic element provided among, and visually distinguished in appearance from, the patterns of bars and spaces, at least a portion of the graphic element being machine readable; and

decoding the scanned characters according to a symbology definition by recognizing the portion of the graphic element as a portion of the symbol, the graphic element constituting a graphical user interface that graphically conveys to a human operator a visual message that a known action will be initiated upon reading of the respective symbol.

16. (Amended) An apparatus, comprising:

means for producing a representation of a symbol having characters formed from patterns of bars and spaces, each character spanning a distance of m module widths and being represented by n bars and p interleaved spaces, the largest single bar or space in each character being limited to k modules in width, the symbol having a predetermined start pattern, a predetermined stop pattern, and a human recognizable graphic element provided among, and visually distinguished in appearance from, the patterns of bars and spaces, at least a portion of the graphic element being machine readable and recognizable by a decoder as a portion of the symbol, the graphic element constituting a graphical user interface that graphically conveys to a human operator a visual message that a known action will be initiated upon reading of the respective symbol; and

means for printing the representation on a substrate.

1.   A bar code symbology, comprising: a set of symbols including characters having patterns of bars and spaces, each character spanning a distance of m module widths and being represented by n bars and p interleaved spaces, the largest single bar or space being limited to k modules in width, each symbol having a human recognizable graphic element provided among, and visually distinguished in appearance from, the patterns of bars and spaces, at least a portion of the graphic element being machine readable and recognizable by a decoder as a portion of a respective symbol, the graphic element constituting a graphical user interface that graphically conveys to a human operator a visual message that a known action will be initiated upon reading of the respective symbol.

12.   An information-bearing machine-readable carrier, comprising:

a substrate; and

a symbol having characters and patterns of bars and spaces on the substrate, each character spanning a distance of m module widths and being represented by n bars and p interleaved spaces, the largest single bar or space in a character being limited to k modules in width, the symbol having a predetermined start pattern and a human recognizable graphic element provided among, and visually distinguished in appearance from, the patterns of bars and spaces, at least a portion of the graphic element being machine readable and recognizable by a decoder as a portion of a respective symbol, the graphic

element constituting a graphical user interface that graphically conveys to a human operator a visual message that a known action will be initiated upon reading of the respective symbol.

13. (Amended) An apparatus, comprising:

an imager for obtaining image data of a target in an image field, the target including a symbol having characters and patterns of bars and spaces, each character spanning a distance of m module widths and being represented by n bars and p interleaved spaces, the largest single bar or space in a character being limited to k modules in width, the symbol having a predetermined start pattern, a predetermined stop pattern, and a human recognizable graphic element provided among the patterns of bars and spaces, at least a portion of the graphic element being machine readable; and

a decoder for recognizing the portion of the graphic element as a portion of the symbol, and for processing the image data to derive information contained in the symbol, the graphic element constituting a graphical user interface that graphically conveys to a human operator a visual message that a known action will be initiated upon reading of the respective symbol.

14. An apparatus for generating a signal representative of information encoded in a machine-readable symbol, the apparatus comprising:

a) a scanner for scanning a single row of encoded characters of the symbol with light for reflection therefrom, each character representing an item of data and being selected from a set of detectable mark/space patterns, each character spanning a

distance of m module widths and being represented by n bars and p interleaved spaces, the largest single bar or space in each character being limited to k modules in width, the symbol having a human recognizable graphic element provided among, and visually distinguished in appearance from, the patterns of bars and spaces, at least a portion of the graphic element being machine readable;

b)   a detector for detecting at least a portion of light reflected from the symbol, and for generating an electrical signal indicative of the detected light; and

c)   a decoder for recognizing from the electrical signal the portion of the graphic element as a portion of the symbol, and for decoding the electrical signal to obtain a plurality of corresponding data values representative of the information contained in the symbol, the graphic element constituting a graphical user interface that graphically conveys to a human operator a visual message that a known action will be initiated upon reading of the respective symbol.

15.   A method of decoding a bar code symbology that stores computer-executable instructions on a computer-readable medium, comprising the steps of:

acquiring data from an electro-optical scan of a bar code symbol having said symbology by scanning a single row of encoded characters of the symbol with light for reflection therefrom, each character representing an item of data and being selected from a set of detectable mark/space patterns, each character spanning a distance of m module widths and being represented by n bars and p interleaved spaces, the largest single bar or space in
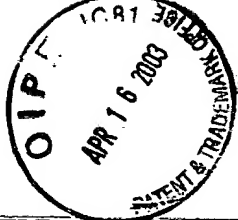
each character being limited to k modules in width, the symbol having a human recognizable graphic element provided among, and visually distinguished in appearance from, the patterns of bars and spaces, at least a portion of the graphic element being machine readable; and

decoding the scanned characters according to a symbology definition by recognizing the portion of the graphic element as a portion of the symbol, the graphic element constituting a graphical user interface that graphically conveys to a human operator a visual message that a known action will be initiated upon reading of the respective symbol.

16.   An apparatus, comprising:

means for producing a representation of a symbol having characters formed from patterns of bars and spaces, each character spanning a distance of m module widths and being represented by n bars and p interleaved spaces, the largest single bar or space in each character being limited to k modules in width, the symbol having a predetermined start pattern, a predetermined stop pattern, and a human recognizable graphic element provided among, and visually distinguished in appearance from, the patterns of bars and spaces, at least a portion of the graphic element being machine readable and recognizable by a decoder as a portion of the symbol, the graphic element constituting a graphical user interface that graphically conveys to a human operator a visual message that a known action will be initiated upon reading of the respective symbol; and

means for printing the representation on a substrate.

ABSTRACT OF THE DISCLOSURE

A bar code symbology comprises a set of symbols having characters and patterns of bars and spaces. Each character spans a distance of m module widths and is represented by n bars and p interleaved spaces. The largest single bar or space is limited to k modules in width. A human recognizable graphic element is included among the patterns of bars and spaces. At least a portion of the graphic element is machine readable and recognizable by a decoder as a portion of the symbol.